AutoGC Evaluation

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Outline

- Overview of Evaluation Plan
- Participants in Laboratory Evaluation
- Summary of Laboratory Results
- Planned Participants in Field Evaluation
- Training Opportunities

Overview of Evaluation Plan

- A two phase evaluation is planned
  - A laboratory phase - completed in April
  - A field phase - expected to start this fall
- For the laboratory evaluation the autoGCs were tested with controlled gasses to evaluate performance (precision, bias, impact of temperature and humidity) and operation of the autoGC
- For the field evaluation the autoGCs will be installed in a mobile lab for evaluation at up to four field locations
  - Currently planning on RTP, Los Angeles, Baton Rouge, and New York
  - Will run in RTP over winter and begin “tour” in spring of 2015

Laboratory Phase Participants

Baseline and CDS Analytical

- Duel GC/FID Detector coupled with CDS auto-sampler
- Medium sized rack-mounted system
- Relative cost: $$

Chromatotech

- Medium sized rack-mountable autoGC
- Integrated sampler
- Duel column GC/FID
- Relative cost: $$$

Defiant Technologies

- Very small autoGC
- Integrated sampler
- GC/PID
- Relative cost: $

Markes International and Agilent

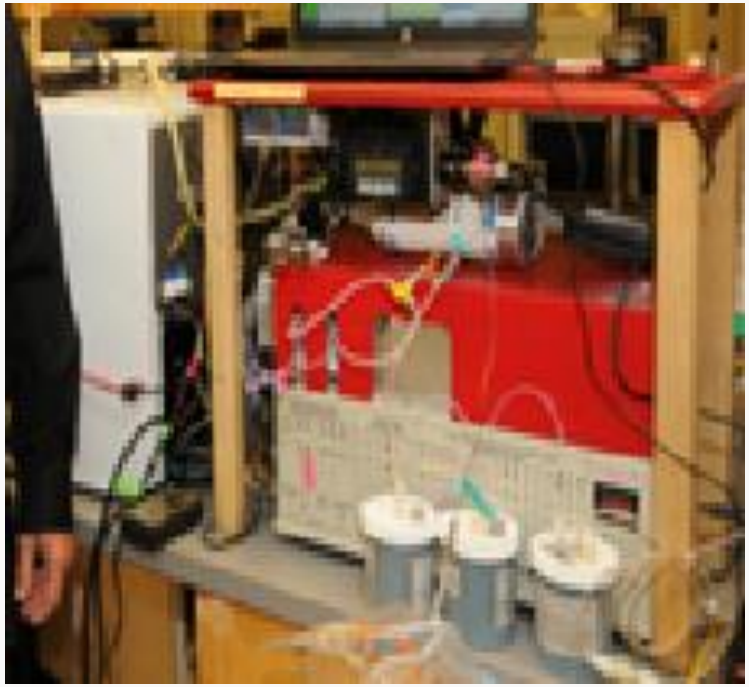
- Agilent GC/FID coupled with a Markes auto-sampler
- Lab-style autoGC
- Relative cost: $$$

PerkinElmer

- Laboratory style autoGC
- Duel GC/FID
- Auto-sampler also made by PerkinElmer
- Relative cost: $$$

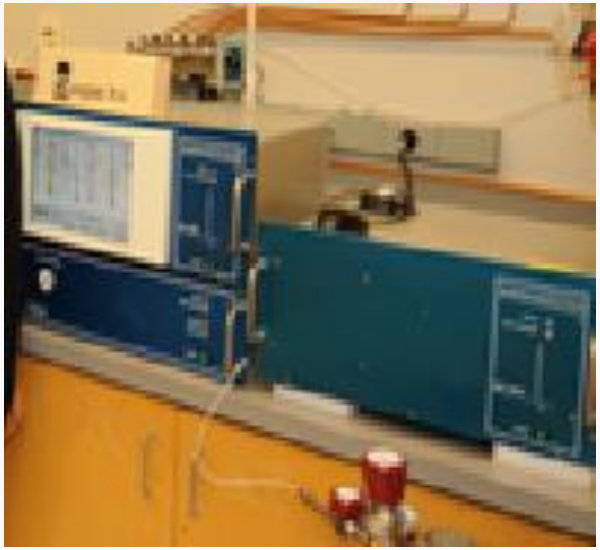
SRI Instruments

- Medium sized autoGC
- Integrated sampler
- GC/FID
- Relative cost: $



Synspec

- Medium sized rack-mountable autoGC
- Integrated sampler
- Duel detector capability (FID/PID)
- Relative cost: $$$

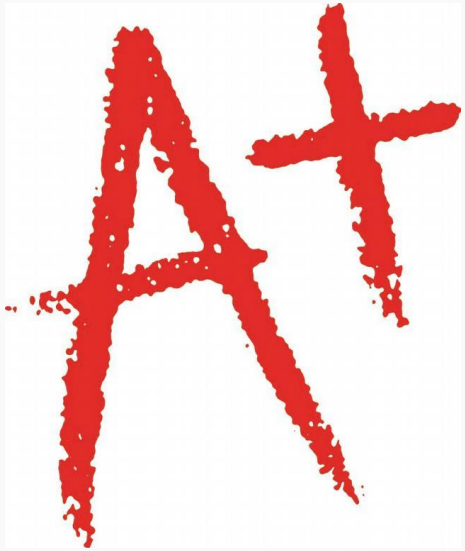


Thermo Fisher and Markes International

- Laboratory-style autoGC
- Thermo GC/MS coupled with Markes auto-sampler
- Relative Cost:$$$

Results of Laboratory Phase

- The lab testing was conducted in April 2014
- The study went very well with a few minor “hiccups”



Summary of Lab Evaluation of AutoGCs

Vendor ID	Type	Description	Precision (%)	Bias (%)	MDL (ppb)	Completeness (%)	Rank
1	Lab system	GC/FID	13	32	0.5	100	4
2	Portable	GC/PID	24	42	0.5	54	6
3	Lab system	GC/MS	13	20	0.3	100	3
4	Rack mount	GC/FID	27	87	0.8	56	8
5	Lab system	GC/FID	3	16	0.1	100	1
6	Rack mount	GC/FID	64	66	2.3	84	7
7	Rack mount	GC/FID	13	24	0.2	98	2
8	Rack mount	GC/FID	29	74	0.2	72	5

AutoGCs Moving on to Field Phase

- Six autoGCs will be evaluated in the field phase
  - Agilent/Markes
  - Baseline/CDS
  - Chromatotech
  - PerkinElmer
  - Synspec
  - Thermo Fisher/Markes

Timing

- Plan to get lab equipped in RTP in late October
- Will run at RTP until early spring 2015
- Hope to finish testing by October 2015

Training Opportunities

- We plan to hold autoGC training at each of the four field study locations (RTP, LA, NY, and CA)
- We will be holding a number of online trainings for the new VOCData in the coming months
- Keep an eye out for announcements on our listserv